

What is claimed is:

1. A method for producing a catalyst containing at least molybdenum, bismuth and iron for use in producing an unsaturated aldehyde and an unsaturated carboxylic acid through gas-phase catalytic oxidation of propylene, isobutylene, tertiary butyl alcohol or methyl tertiary butyl ether with molecular oxygen, comprising the steps of:
kneading particles containing catalyst components, an organic binder and a liquid; and
extrusion molding the resultant kneaded mixture,
wherein the organic binder contains at least a high-viscosity organic binder having a viscosity (of its 1% water solution or dispersion at 20°C) of from 5,000 mPa·s to 25,000 mPa·s and a low-viscosity organic binder having a viscosity (of its 1% water solution or dispersion at 20°C) of from 10 mPa·s to less than 5,000 mPa·s.
2. The method for producing the catalyst according to claim 1, wherein a rate of adding the liquid to be added is 0.2 part by mass / min or less per 1 part by mass of the particles containing the catalyst components.
3. The method for producing the catalyst according to claim 1, wherein a temperature of the liquid to be added is 20°C or less.
4. A catalyst for use in producing an unsaturated aldehyde and an unsaturated carboxylic acid produced by the method for producing the catalyst according to any one of claims 1 to 3.
5. A method for producing an unsaturated aldehyde and an unsaturated carboxylic acid by using the catalyst according to claim 4 through gas-phase catalytic oxidation of propylene, isobutylene, tertiary butyl alcohol or methyl tertiary butyl ether with molecular oxygen.